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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,772	01/08/2002	Michael E. Webber	S00-229/US	5323

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EXAMINER

COCKS, JOSIAH C

ART UNIT	PAPER NUMBER
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3749

DATE MAILED: 03/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/042,772

Applicant(s)

WEBBER ET AL.

Examiner

Josiah Cocks

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 is/are allowed.
- 6) ☒ Claim(s) 9-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Receipt of applicant's amendment filed 1/2/04 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 9 and 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by R.M. Mhlacea, et al., "Diode-laser absorption measurements of CO₂ near 2.0 μm at elevated temperatures" published December 20, 1998 in Vol. 37 No. 36 of APPLIED OPTICS (hereinafter "the *Mhlacea et al.* publication") (cited by applicant in IDS filed 1/8/02 and entered as paper #5)

The *Mhlacea et al.* publication discloses a system as described in applicant's claims 9 and 13-16 including a plurality of laser sensors with at least one sensor operated at a selective wavelength near 2 μm (see p. 8341, col. 2). The *Mhlacea et al.* publication proposes that *in situ* measurements may be taken of the transition lines of the CO₂ transition band including the R (56), lines at elevated temperatures in excess of 400K and notes that additional transitions for *in situ* detections may be present at R (38), and R (50) (see p. 8345, cols. 1 and 2).

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In regard to the limitation of claim 9 that the laser sensors interrogate a selective R(50) transition, this limitation does not define any distinct structure the claimed system. This limitation is simply describing the operation of the laser sensors. The following is an excerpt from MPEP § 2114:

APPARATUS CLAIMS MUST BE STRUCTURALLY DISTINGUISHABLE FROM THE PRIOR ART

>While features of an apparatus may be recited either structurally or functionally, claims directed to >an< apparatus must be distinguished from the prior art in terms of structure rather than function. >*In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); <*In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device *is*, not what a device *does*." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

As far as is proper, the examiner considers that as the laser sensors would be capable of interrogating an R (50) transition. Therefore, as the apparatus claims 9 and 13-16 do not include any distinct structure, these claims are not regarded as patentably distinct over the structure disclosed in the *Mihlacea et al.* publication. The type of laser identified publication is an external cavity diode laser (ECDL) (see p. 8342, col. 1).

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Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 10-12 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over The *Mihlacea et al.* publication in view of *Brand et al.* (US # 6,064,488).

The *Mihlacea et al.* publication discloses all the limitations of claims 10-12, and 17-20 except possibly for the use of a process chamber or sampling line for taking measurements, one of the types of lasers identified in claims 18 and 19, or one of the interrogation techniques identified in claim 20.

Brand et al. teaches a gas measuring method and system in the same field of endeavor as the *Mihlacea et al.* publication wherein *Brand et al.* includes the use of a variety of lasers used in

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gas spectroscopy including the distributed feedback diode laser and vertical cavity surface emitting laser, and Fabry-Perot laser identified by applicant (see *Brand et al.*, col. 2, lines 39-50) and described as the equivalent of the external cavity diode laser (ECDL) identified by the *Mihlacea et al.* publication. *Brand et al.* also teaches the use of a sampling cavity (16) and a frequency-modulation spectroscopy interrogation technique (see col. 1, lines 18-20). *Brand et al.* further teaches the use of optical fibers, a collimating lens, and a diffraction grating (see col. 2, lines 45-62).

Therefore, in regard to claims 10-12 and 17-20, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system and method of the *Mihlacea et al.* publication to incorporate the types of lasers, techniques, and optical structure taught by *Brand et al.* as the use of each of these structures in *in situ* measurement of gas concentration contribute to producing a more accurate measurement (see *Brand et al.*, col. 2, lines 5-24).

Allowable Subject Matter

7. Method claims 1-7 are allowed.

Response to Arguments

8. Applicant's arguments filed 1/2/04 regarding claims 9-20 have been fully considered but they are not persuasive.

Applicant's arguments as to the interrogation of the R(50) spectroscopic transition in applicant's system claims are non persuasive. As noted in item 3 above, a recitation of the

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intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Applicant's apparatus claims do not describe any structure not present in the *Mihlacea et al.* publication.

Applicant also argues on page 9 of the response that the *Mihlacea et al.* publication teaches away from interrogating the R(50) spectroscopic transition. This argument is not well taken. The interrogation of the R(56) spectroscopic transition in *Mihlacea et al.* publication does not "teach away" from the use of other spectroscopic transitions. As applicant notes, the *Mihlacea et al.* publication, in fact, considers that other spectroscopic transitions such as R(38) and R(50) are potential transition lines that may be interrogated.

Applicant also argues that there is no motivation to combine the teachings of *Brand et al.* with the *Mihlacea et al.* publication. Applicant characterizes this combination as "modifying Mihlacea with a kitchen sink of lasers, techniques, and miscellaneous structural elements as provided by Brand" and argues that these items would not produce a more accurate measurement. Such a characterization is hardly accurate. *Brand et al.* shows a gas spectroscopy measurement method and system that is clearly analogous art to the *Mihlacea et al.* publication. *Brand et al.* teaches the use of each of the lasers, techniques, and structural elements recited in applicant's claims, noting that in some cases some of these elements are the equivalent functional elements as those of *Mihlacea et al.* (note col. 2, lines 39-50 equating a ECDL with a

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Fabry-Perot laser). *Brand et al.* states that the purpose of their invention is to yield an accurate concentration measurement in gas spectroscopy. The known lasers, techniques, and structural elements recited in applicant's claims and present in the *Brand et al.* reference contribute to production of the accurate concentration measurements. A person of ordinary skill in the art would reasonably be prompted to incorporate these structures of *Brand et al.* in the spectroscopy measurement system of the *Mihlacea et al.* publication.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Josiah Cocks whose telephone number is


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(703) 305-0450. The examiner can normally be reached on weekdays from 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus, can be reached at (703) 308-1935. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

jcc
March 9, 2004


JOSIAH COCKS
PATENT EXAMINER
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